Ontario

Modular Training Standards

Common Core for Basic Smelter Operations – Mineral Ore

Ministry of Training,
Colleges and Universities

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Colleges and Universities

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Common Core for Basic Smelter Operations – Mineral Ore

Program #810080

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This document is the property of the trainee/ employee named inside and represents the official record of his/her training.

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SIGNING AUTHORITY REQUEST

In order to attest to competency of employees, a company must submit written application for signing authority to the local Apprenticeship office.

REGISTRATION

Where accreditation is required and/or desired, the worker/trainee must be registered with the Ministry of Training, Colleges and Universities, Apprenticeship and Client Services office in the local area.

ACCREDITATION

The Ministry of Training, Colleges and Universities will issues a Certificate of Achievement to the worker/trainee upon proof of successful attainment of the Common Core.

Accreditation Requirements for the Common Core Basic Smelter Operations- Mineral Ore Program.

Who Qualify – who is this training intended for?

- production workers
- 1st line supervisors

To qualify for a Certificate of Achievement – Common Core for Basic Smelter Operations – Mineral Ore, each of the following modules must be completed:

U1590	Safety-protect Self and Others
U1591	Work Safely in a Smelter Environment
U1592	Housekeeping
U1593	Hand and Power tools
U1594	Lifting Devices
U1595	Work with Ladders and Scaffolds and/or Platforms
U1596	Deal with Designated and other Hazardous Substances
U1597	Operate Elevators

MODULAR TRAINING TERMS

Modular Training:	a self-paced, performance-based training system which provides workers/trainees with knowledge, skills and attitudes to be competent workers.
Module:	a training unit comprised of Tasks/Skills, Enabling Objectives, and Terminal Performance Objectives. The Enabling Objectives describe prerequisite skills and the knowledge required to meet the minimum standards of competency stated in the Terminal Performance Objectives. Performance Demonstration Guidelines are a means a evaluating skills through observed practical performance for determining the achievement of the prescribed Terminal Performance Objectives.

Definitions

And/or:	one or both;
As applicable:	to complete the items that apply to a particular operation; may not apply to all operations;
As it/they relate:	must include all items listed;
As required:	to be demonstrated as required by a situation/ the company or legislation. May not apply to all companies;
Demonstrate a Knowledge:	do hands on demonstration or verbal and/or written test;
Demonstrate Skills required:	do hands on demonstration;
Demonstrate the Procedure:	do hands on demonstration;
Determine:	ascertain, find out or establish a knowledge in;
Ensuring:	the skill described may either be demonstrated by the worker/trainee, or be ensured by one that it has been properly done;
Recognize/Identify:	demonstrate a knowledge of;
Such as:	one, or more, or all the items listed, but is not limited to the list only;
Which shall Include:	the items listed, and may be added to by the company, if procedures warrant;
With respect to:	must include all items listed.

COMMON CORE FOR BASIC SMELTER OPERATIONS - MINERAL ORE

PREFACE

The Ministry of Training, Colleges and Universities is grateful for the contribution of the members of the Training Standards Development Committee, in the development of the Common core for Basic Smelter Operations - Mineral Ore Training Program.

COMPANY REPRESENTATIVES:

M. A. McDonald	Falconbridge Ltd., Falconbridge Smelter
D. Naykalyk	INCO Ltd., INCO Copper Cliff Smelter
E. Vehkalahti	Falconbridge Ltd., Kidd Creek Smelter Division
R. Coté	Falconbridge Ltd., Kidd Creek Smelter Division
S. Kirwan	Falconbridge Ltd., Falconbridge Smelter
B. Morris	Falconbridge Ltd., Kidd Creek Smelter Division

UNION REPRESENTATIVES:

W. Bronicheski	Falconbridge Ltd., (Sudbury Mine, Mill & Smelter Workers Union Local 598, Canadian Auto Workers, TCA Canada)
B. Robinson	Falconbridge Ltd., (Sudbury Mine, Mill & Smelter Workers Union Local 598, Canadian Auto Workers, TCA Canada)
P. Carriere	Falconbridge Ltd., (United Steel Workers of America, Local 6855)
R. Lauzon	Falconbridge Ltd., (United Steel Workers of America, Local 6855)
D. Hinds	INCO Ltd., (United Steel Workers of America, Local 6600)
C. L. Fraser	INCO Ltd., (United Steel Workers of America, Local 6500)
F. Tulk	INCO Ltd., (United Steel Workers of America, Local 6500)
K. Grenke	Falconbridge Ltd., Kidd Creek Smelter Division, (Canadian Auto Workers, TCA Canada)

GOVERNMENT REPRESENTATIVES:

C. Kennedy	Ministry of Labour
A. Jennings	Ministry of Labour
K. Holmeshaw	Ministry of Training, Colleges, and Universities
M. Foster-Chandler	Ministry of Training, Colleges, and Universities

RESOURCE PERSONS

R. Hurme	Falconbridge Ltd.
P. Foucault	Falconbridge Ltd.
S. Pasierowski	INCO Ltd
R.Girard	Noranda Mineral

IMPORTANT DIRECTIONS TO TRAINERS

The Training Standards identify skills required for this occupation and its related training program.

These Training Standards have been written in concise statements which describe how well a trainee must perform each skill in order to become competent.

In using these Training Standards, trainers will be able to ensure that the trainee is developing skills detailed for the occupation.

Trainers and trainees are required to sign off and date the skills following each successful acquisition.

Employers participating in this training program will be designated as the Signing Authority and are required to attest to successful achievement by signing the appropriate box included at the end of each unit.

IMPORTANT DIRECTIONS TO THE TRAINEE

Trainee

1. All hours working for each employer(s) should be recorded in the Employer Information section.

2. It is the responsibility of the trainee to inform the local Apprenticeship Client Services office regarding the following changes:

    - change of trainee name or address;

    - transfer to a new employer.

5. Training Reports must be signed for modular trainees by a MTCU designated Signing Authority
and forwarded to a local Apprenticeship Client Services office.

6. At the completion of training, the Trainee Completion Form must be completed and signed off by the Signing Authority and submitted to local Apprenticeship Client Services office.

NOTICE/DECLARATION FOR COLLECTION OF PERSONAL INFORMATION

1. This information is collected under the authority of the Order-In-Council Number 701/85.

2. The information is collected for the purpose of administering this modular training program within the Province of Ontario.

3. Questions regarding collection and use of this information may be directed to:

Director of Apprenticeship
Workplace Support Services Branch
Ministry of Training, Colleges and Universities
900 Bay Street
17th Floor, Mowat Block
Toronto, Ontario
M7A 1L2
(416) 326-5605

TRAINEE RECORD

Trainee Name: _____

Contract Number: _____
(If applicable)

EMPLOYER INFORMATION

Company: _____

Address: _____

_____

Telephone: _____

SUMMARY OF HOURS:

Dates of Employment: _____ _____
From To

Total hours of Training and Instruction between dates of Employment _____ Hours

_____	_____	_____	_____
Employer's Signature	Date	Trainee Signature	Date

EMPLOYER INFORMATION

Company: _____

Address: _____

_____

Telephone: _____

SUMMARY OF HOURS:

Dates of Employment: _____ _____
From To

Total hours of Training and Instruction between dates of Employment _____ Hours

_____ _____ _____ _____
Employer's Signature Date Trainee Signature Date

EMPLOYER INFORMATION

Company: _____

Address: _____

_____

Telephone: _____

SUMMARY OF HOURS:

Dates of Employment: _____ _____
From To

Total hours of Training and Instruction between dates of Employment _____ Hours

_____ _____ _____ _____
Employer's Signature Date Trainee Signature Date

EMPLOYER INFORMATION

Company: _____

Address: _____

_____

Telephone: _____

SUMMARY OF HOURS:

Dates of Employment: _____ From _____ To

Total hours of Training and Instruction between dates of Employment _____ Hours

_____ Employer's Signature _____ Date _____ Trainee Signature _____ Date

EMPLOYER INFORMATION

Company: _____

Address: _____

_____

Telephone: _____

SUMMARY OF HOURS:

Dates of Employment: _____ From _____ To

Total hours of Training and Instruction between dates of Employment _____ Hours

_____ Employer's Signature _____ Date _____ Trainee Signature _____ Date

TRAINEE COMPLETION FORM

Trainee Name _____
Print

_____
Signature

Social Insurance Number _____

Training Units when completed should be Signed off by Trainer/ Signing Authority on the following page and presented with this completion form to your local Apprenticeship Client Services office. Any supporting documentation should also be attached.

In-School Completed: (proof to be provided) Yes ( ) No ( ) Not Applicable ( )

Hours completed as per Contract: Yes ( ) No ( ) Not Applicable ( )

Employer Name: _____

Address: _____

Telephone: _____

Signing Authority: _____
Signature

MTCU USE ONLY:

Recommended for Exam: Yes ( ) No ( )

_____ _____
Signature Consultant/Office Code

TRAINING UNIT COMPLETION FORM

TRAINING UNITS	TITLE	SIGNING AUTHORITY
U1590	Safety-protect Self And Others	_____
U1591	Work Safely in a Smelter Environment	_____
U1592	Housekeeping	_____
U1593	Hand And Power Tools	_____
U1594	Lifting Devices	_____
U1595	Work With Ladders And Scaffolds And/or Platforms	_____
U1596	Deal With Designated And Other Hazardous Substances	_____
U1597	Operate Elevators	_____

U1590.0 SAFETY-PROTECT SELF AND OTHERS

GENERAL PERFORMANCE OBJECTIVE

Select, adjust, wear, and maintain personal protective equipment and protect self and others in the workplace, by inspecting for hazardous conditions and taking appropriate action to guard and/or remove same. All work must be done in compliance with applicable acts, regulations, standards and company standards.

U1590.01 SELECT, ADJUST, WEAR, AND MAINTAIN HEAD PROTECTORS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine the various situations requiring head protectors (ref. O.H.S.A.). Identify the specified head protectors with respect to: • types; • sizes and fits; • materials; • protective features; • applications and limitations; • and, defects. Determine the correct methods of wearing, adjusting, and maintaining specified head protectors.	Select, adjust, wear and maintain head protectors to ensure: • proper fit; • adequate protection compliance with O.H.S.A; • adherence to company standards.

U1590.02 SELECT, ADJUST, WEAR AND MAINTAIN EYE PROTECTORS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine the various situations requiring eye protectors. Identify the specified eye protectors with respect to: • types; - safety glasses clear and/or tinted (complete with side shields) - burning goggles - welders helmet with shield - no goggles - face shields clear and/or tinted • sizes and fit;	Select, adjust, wear and maintain eye protectors to ensure: • proper fit; • adequate protection; • adherence to company standards.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
• protective features; • applications and limitations. Determine the correct methods of selecting, adjusting, wearing, and maintaining the specified eye protectors.	

U1590.03 SELECT, ADJUST, WEAR AND MAINTAIN FACE SHIELDS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify different face shields with respect to: • types; • sizes and fits; • applications; • protective features; • clear and/or tinted. Determine procedures for wearing, adjusting maintaining and storing face shields and situations requiring the use of same.	Select, adjust, wear and maintain face shields to ensure optimum protection (ref. O.H.S.A.).

U1590.04 SELECT, ADJUST, WEAR AND MAINTAIN FOOT PROTECTORS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine the correct method of selecting, wearing, adjusting and maintaining the specific foot protectors with respect to: • types: - shoes; - boots; - rubber boots; - spats; - metatarsal guards. • sizes and fits; • materials; • protective features; • applications and limitations and situation require the use of same (ref. O.H.S.A.).	Select, adjust, wear, and maintain foot protectors to ensure: • correct fit; • optimum protection; • adherence to company standards.

U1590.05 SELECT, ADJUST, WEAR AND MAINTAIN HEARING PROTECTORS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine the various situations requiring hearing protectors. Identify hazards of noise. Identify the specified hearing protectors with respect to: • types such as; - plugs - hat mounted muffs • sizes and fits; • protective features; • and, application and limitations. Determine the correct methods of wearing, adjusting and maintaining specified hearing protectors.	Select, wear, adjust, and maintain hearing protection (plugs and ear muffs) to ensure: • proper fit; • optimum protection; • adherence to company standards; • reduced chronic effects of noise.

U1590.06 SELECT, ADJUST, WEAR AND MAINTAIN RESPIRATORY PROTECTORS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine various situations requiring the use of respiratory protectors (ref. O.H.S.A.). Identify contaminants with respect to types such as: • gas; • vapor; • dust. Determine selection of respirator cartridge. Identify respiratory protectors with respect to types such as: • selfcontained breathing apparatus (S.C.B.A.); • respirators (full and half face); • self rescuers; • air supplied purifying helmet;	Select, adjust, wear, and maintain respiratory protectors to ensure: • proper fit (conduct field fit test); • optimum protection; • adherence to company standards; • proper cleaning and maintenance.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
• sizes and fits (fit test); • protective features; • applications and limitations; • and, types of cartridges (and the situation requiring the use of same). Determine and apply the methods of selecting wearing, adjusting and maintaining the specified respiratory protectors with respect to: • changing filter(s); • cleaning respirators; • storage of same; • repairing or replacing defective components.	

U1590.07 SELECT, ADJUST, WEAR AND MAINTAIN PROTECTIVE CLOTHING

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine the various situations requiring protective clothing. Identify the specified protective clothing with respect to: • types such as: - long underwear; - bailman's jacket; - woolen and/or canvas pants; - disposable coveralls; - shirts and coats. • sizes and fits; • materials; • protective features(acid resistant clothing); • applications and limitations. Determine and apply methods of selecting, wearing, and adjusting, and maintaining the specified protective clothing. Determine the effect of contamination of protective clothing and the procedure for cleaning and storage.	Select, wear, adjust, and maintain protective clothing to ensure: • optimum protection; • proper fit; • adherence to company standards; • cleanliness.

U1590.08 SELECT, ADJUST, WEAR AND MAINTAIN HAND PROTECTORS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine the various situations requiring hand protectors. Identify the specified hand protectors such as: • types: - chemical resistant; - temperature resistant (hot/cold); - rubber/latex; - leather; - cotton; - metal. • sizes and fits; • protective features; • applications and limitations. Determine and apply the correct methods of selecting wearing and maintaining the specified hand protectors.	Select, wear, and maintain hand protectors to ensure: • proper fit; • optimum protection; • adherence to company standards.

U1590.09 PRACTICE PERSONAL HYGIENE

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine the effects of contamination on self such as: • dermatitis; • burns; - friction - chemical - heat - cold - electrical • skin absorption and blood absorption; • inhalation; • ingestion; • injection. Drink only from potable water supplies.	Practice personal hygiene in the work place by: • washing/showering to avoid contamination; • wearing proper clothing to avoid contamination; • using barrier creams to help prevent absorption of contaminants into the body (as applicable); • ensure clothing and Personal Protective Equipment (PPE) cleaned in proper manner.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine the situations requiring use of eye washes/safety showers and immersion tubs and procedures for using same. Determine the effect of contamination of clothing/personal protective equipment on self and others. Determine the situations requiring the use of barrier creams. Determine company procedures with respect to exposure to contaminants. Determine procedures to avoid contamination from clothing and personal protective equipment including: • changing clothes; • laundering of clothing; • cleaning of personal protective equipment.	

NOTE: *Eat only in designated lunch-rooms. Wash hands and face and remove protective coveralls prior to entering lunch area.*
Do not use compressed air to blow off clothing. Use only approved cleaning agents to clean PPE.

U1590.10 INSPECT THE WORKPLACE FOR HAZARDOUS OR POTENTIALLY HAZARDOUS CONDITIONS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine hazardous or potentially hazardous conditions in the workplace with respect to: • liquid, solids, gases; • molten metal; • environmental: - noise - friction - air - land - dust/fume/smoke/vapor/mist • spills or leaks;	Deal with actual or potentially hazardous conditions in the workplace following company procedures which shall include: • observing instructions for safely handling hazardous materials (ref. O.H.S.A.); • reporting hazardous or potentially hazardous conditions to appropriate personnel; • guarding identified hazardous locations (as applicable); • cleaning up spills, leaks (as applicable)

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
- chemicals - liquids - solids - gases - molten metal • high energy sources such as: - friction - electricity - furnace electrodes - bus bars - cables - temperature (molten metal/radiant/heat) - pressure (air, water, hydraulics) • radiation (gamma gauges etc.); • Electromagnetic fields have the potential to affect the operation of pace makers; • stored energy sources: - electricity (electrostatic) - electrostatic precipitators (E.S.P.) - static electrical charge(s) - mechanical: (air/water stored pressure) - chemicals: (acid to water) Determine procedures for taking appropriate action to remove and/or guard hazardous conditions such as: • cleaning up spills/leaks; • guarding all identified hazardous locations using required rope/barriers and signs where applicable and ensuring necessary follow-up actions to restore safe operating conditions; • observing company emergency procedures.	• disposing of spilled materials in proper container(s); • evacuating area (as applicable); • ensuring stored static electricity is grounded out; • bleeding off stored pressure air/water; • cleaning up hazardous or potentially hazardous material and disposing of such in a proper and/or recommended fashion.

U1590.11 RECOGNIZE VISUAL WARNING DEVICES

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine the types of visual warning and their applications such as: • safety signs; - informational - directional • lights;	Correctly identify visual warning devices with respect to: • operating; • ready; • stop; • emergency warning;

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
- operating - emergency/evacuation • barriers; - guardrails - barricade tape.	• identify appropriate action to be taken upon activation/deactivation (as applicable).

U1590.12 RECOGNIZE AUDIBLE WARNING DEVICES

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine the types of audible warnings and their application such as: - operating - emergency/evacuation.	Correctly identify audible devices with respect to: • horns and/or; • bells and/or; • sirens and/or; • whistles and/or; • buzzers; • public address systems; and take appropriate action when they are activated following company procedures.

U1590.13 FOLLOW COMPANY FIRE PROCEDURES

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine different classes of fires such as: • class A - combustible materials, wood, cloth, paper, rubber and plastics; • class B - fires in flammable liquids, oils, grease, tars, paints, lacquers and flammable gases; • class C - fires which involve energized electrical equipment; • class D - combustible metals. Identify the standard types, sizes, and applications of fire extinguishers and suppressants for: • class "A" fires: - stored pressure - cartridge operated • class "B" fires: - dry chemical cartridge - dry chemical stored pressure - foam (as applicable) • class "C" fires:	Demonstrate the skills required to follow company procedure which shall include: • locating the fire; • assessing the severity of the fire (minor/major); • taking appropriate action such as: - suppressing minor fire (if possible) - reporting the fire to appropriate personnel immediately - activating fire alarm (as required) - evacuating area and proceeding to designated safe location and awaiting further instructions (as required).

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
- dry chemical stored pressure (as applicable) • class "D" fires: - class "D" extinguishing powder Describe the ranges and limitations of various fire extinguishers. Determine methods of maintaining and storing same. Determine hazards of using water on molten metal fire. Determine the safety precautions when using fire extinguishers including CO_2 hazards and misuse. Determine the safe and efficient methods of combating Class A,B,C, and D fires. Determine company fire and emergency evacuation procedures.	

NOTE: *Water is not to be used on or near electrical equipment.*

U1590.14 LOCK-OUT AND TAG ELECTRICAL EQUIPMENT

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine situations requiring lock-out and tagging procedures with respect to any repair/maintenance of equipment with an electrical power supply (ref. O.H.S.A.). Determine reasons necessitating lock-out and tagging procedures with respect to: • personal safety • safety of others • protection of equipment. Determine the hazards/procedures associated with the locking out and tagging of computer, remote, and radio controlled equipment. Determine lock-out and tagging procedures and safety precautions to be observed with respect to:	Demonstrate the skills required to lock and tag out electrical equipment as applicable (not to exceed 750V) for repair/maintenance following company procedures (including O.H.S.A.) which shall include: • ensuring personal safety; • ensuring safety of others; • ensuring protection of equipment; • isolating the electrical power supply by ensuring: - switch disconnected - breaker shut off - use of isolation bar/scissor locks - attaching lock(s) to isolation bar/scissor lock - correct equipment locked out - safety interlock system by-passed (if applicable)

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
• isolating the electrical power supply by ensuring: - switch disconnected - breaker shut off - use of isolation bar/scissor locks - attaching of required lock to isolation bar/scissor lock - correct equipment locked out - safety interlock system by-passed (as applicable) - tagging (danger) - test start equipment to ensure isolation; - tagging (informational) - lock(s) and/or tag(s) removed when system(s) restored to normal.	- tagging (danger, informational) - test start equipment to ensure isolation - no power restoration until all lock(s) / tag(s) removed and system(s) restored to normal • use of lock box(es) (as applicable).

U1590.15 LOCK-OUT AND TAG MECHANICAL EQUIPMENT

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine situations requiring lock-out and tagging of mechanical equipment with respect to repair/maintenance. Determine the hazardous or potentially hazardous conditions in the workplace with respect to: • stored (potential) energy sources; • electricity; • mechanical equipment; • chemical substance; • pinch points. Determine reasons necessitating lock-out and tagging procedures with respect to: • ensuring that no material can enter the equipment being repaired and or maintained; • shutting down the process as required; • shutting off valves nearest the flange to be blanked; • neutralizing; • double block and bleed.	Demonstrate the skills required to lock-out and tag mechanical equipment for repair/maintenance as outlined in the enabling objectives, following company procedures ref. O.H.S.A. which shall include: • ensuring that no material can enter the equipment being repaired/maintained; • shutting down the process if required; • shutting off valves nearest flange to be blanked; • draining, purging, depressurizing and/or flushing of lines prior to repair and/or maintenance to ensure that stored energy is dissipated and/or contained; • locking out valves by means of an appropriate device such as: - chain lock(s) - lockable valve(s) - valve lockout device • tagging (danger/informational); • test start to ensure isolation; • ensuring no restoration of process flows until all blanks, lock(s) and tag(s) removed and system(s) returned to normal.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine lock-out and tagging procedures and safety precautions to be observed (ref. O.H.S.A.). Determine procedures for: • draining; • flushing; • purging; • depressurizing.	• blocking/chocking; • use of lock box(es) (as applicable).

PERFORMANCE DEMONSTRATION GUIDELINE

Trainee's / Worker's Name:___

Emp. #___

U1590.0 SAFETY-PROTECT SELF AND OTHERS

TASKS	DATE COMPLETED	INSTRUCTOR'S SIGNATURE	TRAINEE'S/ WORKER'S SIGNATURE
U1590.01 Select, Adjust, Wear And Maintain Head Protectors.	-		
U1590.02 Select, Adjust, Wear And Maintain Eye Protectors	-		
U1590.03 Select, Adjust, And Maintain Face Shields.	-		
U1590.04 Select, Adjust, Wear And Maintain Foot Protectors.	-		
U1590.05 Select, Adjust, Wear And Maintain Hearing Protectors.	-		
U1590.06 Select, Adjust, Wear And Maintain Respirators Protectors.	-		
U1590.07 Select, Adjust, Wear And Maintain Protective Clothing.	-		
U1590.08 Select, Wear And Maintain Hand Protectors.	-		
U1590.09 Practice Personal Hygiene.	-		

CONT'D

PERFORMANCE DEMONSTRATION GUIDELINE

Trainee's / Worker's Name:__

Emp. # ___

U1590.0 SAFETY-PROTECT SELF AND OTHERS

TASKS	DATE COMPLETED	INSTRUCTOR'S SIGNATURE	TRAINEE'S/ WORKER'S SIGNATURE
U1590.10 Inspect The Workplace For Hazardous or Potentially Hazardous Conditions.	-		
U1590.11 Recognize Visual Warning Devices.	-		
U1590.12 Recognize Audible Warning Devices.	-		
U1590.13 Follow Company Fire Procedures.	-		
U1590.14 Lock-out And Tag Electrical Equipment.	-		
U1590.15 Lock-out And Tag Mechanical Equipment.	-		

U1591.0 WORK SAFELY IN A SMELTER ENVIRONMENT

GENERAL PERFORMANCE OBJECTIVE

Work safely in a smelter environment. All work must be done in compliance with applicable acts, regulations, standards, and company standards.

U1591.01 DEAL WITH HAZARDOUS / POTENTIALLY HAZARDOUS CONDITIONS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine hazardous or potentially hazardous conditions in the work place (ref. O.H.S.A.) with respect to: • open holes; • low clearance; • ladders and scaffolds; • suspended loads; • improperly located hoses, piping, tools, materials, and equipment; • barricades; • mobile equipment; • spills and leaks such as: - liquid (hydraulic, motor oil) - process gases (SO_2, SO_3, O_2, N_2, NH_3] • reverts; • custom feeds; • 0_2 deficiency; • O_2 enriched atmosphere; • by product gases (ozone, H_2S, CO,CO_2); • flux; • slurry; • calcine; • molten metal; • natural gas; • chemicals; • high energy sources such as: - electricity - temperature - pressure - friction - radiation	Inspect the workplace for hazardous or potentially hazardous conditions and take corrective action following company procedures (ref. O.H.S.A.) which shall include: • wearing required personal protective equipment; • guarding all identified hazards: - ropes - barriers - barricade tape - personnel - signs • cleaning up spills or leaks as required; • removing the hazard; • reporting the condition to appropriate personnel.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
• airborne hazards; - dust - mist - fume - smoke • structural deterioration or rusting of: - stairways - walkways - floors - platforms Recognize hazards associated with the above such as: • slipping; • falling; • fire; • burns; • respiratory; • toxicity; • explosion; • personal injury; • electrical shock. Determine procedures for: • cleaning up spills and leaks; • reporting; • guarding and safety precautions to be observed (Ref. O.H.S.A.)	

U1591.02 WEAR A FALL ARREST SYSTEM

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for wearing, adjusting and maintaining fall arrest system. Determine situations requiring the wearing of fall arrest system (Ref. O.H.S.A.).	Correctly select, adjust, use, wear, and maintain a fall arrest system (ref. O.H.S.A.).

U1591.03 MANUALLY LIFT AND CARRY MATERIALS AND SUPPLIES

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine proper lifting and carrying procedures with respect to: • size and weight of article to be lifted/ moved; • physical limitations; - using legs rather than back - lifting with a smooth motion - bending knees - carrying load close to body - turning body rather than twisting • conditions in area of lift and carry.	Manually lift and carry materials and/or supplies following company procedures which shall include: • ensuring good footing; • ensuring clear vision and unobstructed path for movement; • wearing gloves to protect hands and fingers; • lifting within one's physical limitations; • wearing personal protective equipment; • avoiding pinch points.

U1591.04 CONFINED SPACE ENTRY

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine the procedure for confined space entry with respect to: • conducting pre-entry checks; • protective equipment; • ventilation and lighting (as applicable); • warning devices; • permits; • guarding; • precautions to be observed; • reporting; • communications. Determine situations requiring the wearing of fall arrest and/or retrieval system. Determine situations requiring use of self contained breathing apparatus or air-line breathing system (ref. O.H.S.A.).	Demonstrate a knowledge of confined space entry following company procedures and O.H.S.A. which shall include: • tagging in/out; • wearing required personal protective equipment; • wearing fall arrest and/or retrieval system as required (ref: O.H.S.A.); • conducting pre-entry checks; - ensuring the locking out of equipment (ref. module: Safety: Protect Self and Others) - ensuring tagging as applicable (ref module: Safety: Protect Self and Others), • ensuring required ventilation and lighting in work area (as applicable); • posting signs (as applicable); • ensuring warning devices in place and operative; • communicating readiness to enter work area to appropriate personnel; • ensuring safe entry and exit from work area; • ensuring an air quality test is completed as required; • reporting any defects, and/or hazards to

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
	appropriate personnel; • completing entry permit report(s); • ensuring the posting of stand-by personnel (guard) as required; • ensuring a person adequately trained in Artificial Respiration is conveniently available (as required).

U1591.05 WORK SAFELY AROUND OPERATING EQUIPMENT

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify smelter operating equipment such as: • conveyor systems; • central control room; • grizzlies; • bulk storage bins; • tanks; • crushing systems; • pumps; • filters; • thickeners; • agitators; • roasters; • electrostatic precipitators (ESP) /Cottrell; • baghouse; • drag conveyors; • furnaces; • electrodes; • slag disposal equipment; • molten metal granulation equipment; - slag - matte • furnace tapping chutes and hot metal launders; • cranes; - production - service • ladles; • molten metal vessels; • matte moulds; • transfer car(s); • slag/matte hauler;	Demonstrate the knowledge and skills required to work safely around operating equipment following company procedures and O.H.S.A. which shall include: • wearing required personal protective equipment (in good condition); • wearing proper clothing (not loose or torn, not nylon, rayon or polyester); • observing safety signs; • observing warning signals and devices including remote controls; • using designated travel ways only; • staying outside of guarded and barricaded area(s); • ensuring proper handling of tools and equipment; • working from a safe location only; • crossing over/under conveyors at designated areas only (as applicable); • communicating with other workers as required; • reporting hazardous or potentially hazardous conditions to appropriate personnel.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
• fans/blowers/compressors; • vacuum pumps; • off-gas systems;. • pneumatic conveying system(s). Determine procedures for working around operating equipment with respect to: • safety equipment; • guards and barricades; • safe handling of tools and equipment; • reporting hazards; • communications; • movement; • remote control. Determine the procedures/hazards associated with the locking out of computer and radio controlled equipment. Determine the hazards of wearing loose or torn clothing. Determine company emergency procedures with respect to: • fire; • personal injury; • evacuation; • fugitive emissions/accidental gas release; • explosions; • molten metal spill.	

U1591.06 WORK SAFELY AROUND HAZARDOUS MATERIALS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify hazardous materials such as: • lime; • acid; • cleaning solvents; • glues; • designated substances (Ref. O.H.S.A.); • oxygen;	Demonstrate the knowledge and skills required to work safely around hazardous materials following company procedures and O.H.S.A. regulations which shall include: • protecting self and others; • wearing required personal protective equipment; • practising personal hygiene;

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
• ammonia; • nitrogen; • process/cooling water; • parting agents; • sulphur dioxide; • sulphur trioxide; • natural gas. Determine hazards associated with exposure to the above with respect to: • burns; • respiratory; • toxicity; • fire; • explosion. Determine procedures for and precautions to be observed while working around hazardous materials including protective equipment (ref. WHMIS labels and Materials Safety Data Sheets) such as: • liquids; - toxic - corrosive - combustible/flammable - solvents - adhesives • solids; - toxic - corrosive - combustible/flammable - spontaneously combustible • gases; - toxic - corrosive	• locating: - emergency flush showers - eye wash fountains/stations, - first aid station(s), - antidote and wash stations/fountains (ref. O.H.S.A.) - emergency phone numbers • communicating with other workers as required; • observing warning signals alarms and signs; • taking appropriate action such as: - reporting hazardous or potentially hazardous conditions to appropriate personnel, - removing hazardous conditions. - guarding area of hazardous and/or potentially hazardous conditions.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
- oxygen displacing - flammable - asphyxiant Determine company procedures for use of emergency treatment with respect to: • emergency flush showers; • eye wash fountain/station; • antidotes and washes (ref. O.H.S.A.). Drink only from potable water supply. Determine and locate communication systems such as: • telephone; • two way radio; • evacuation pull station; • emergency exit(s).	

U1591.07 WORK SAFELY AROUND ENERGY SOURCES

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify energy sources such as: • gases; - combustible - compressed • hydraulic; • steam; • electrical; • fuels; • friction; • radioactive material. Determine the hazards of each energy source such as: • burns;	Demonstrate the knowledge and skills required to work safely around energy sources following company procedures which shall include: • wearing proper clothing (not loose or torn, not synthetic such as nylon, rayon, polyester); • wearing required personal protective equipment in good condition; • observing warning signs, signals, and/or alarms; • communicating with others as required; • reporting hazardous or potentially hazardous conditions; • working only in authorized and safe locations; • initiating emergency response as required.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
• explosion/implosion; • electrocution; • shock; • asphyxiation. Determine procedures for working around high energy sources and precautions to be observed with respect to: • safety protective equipment; • guards and barricades; • reporting hazards; • communication; • movement.	

U1591.08 WORK SAFELY AROUND MOBILE EQUIPMENT

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify equipment such as: • overhead cranes/hoists; • forklift trucks; • front end loader (tires/crawler); • skid steers; • trucks/cars; • boom trucks; • rail car(s); • slag/matte haulers; • front end loaders (articulated); • excavator (equipped with breaker); • locomotives; • scissor trucks; • sweepers; • mobile elevated work platform. Determine procedures to be observed and precautions to be taken when working around mobile equipment with respect to:	Demonstrate the knowledge and skills required to work safely around mobile equipment following company procedures which shall include: • obeying vehicle warning signals, alarms and/or signs; • yielding right of way to vehicle; • remaining visible and maintaining a safe distance; • staying clear of suspended loads(s); • reporting any hazardous or potentially hazardous conditions to appropriate personnel; • recognizing pinch points.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
• signals; • movement; • reporting; • communication; • power lines (over-head, beside and/or buried); • gas/liquid piping (over-head, beside and/or buried).	

U1591.09 CLEAN UP AROUND CONVEYORS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify various types of conveyors such as: • drag; • belt; • paddle; • bucket; • pneumatic; • screw; • pan feeder. Identify the name, function, and location of the principal components of a conveyor such as: • conveyor belt; • screw; • drag link; • bucket • emergency pull cord; • pulleys and idlers; • chutes; • scrapers; • guards; • shuttle/tripper; • counter weight(s); • stop/start, forward/reverse station; • automatic/remote start/stop; • interlocks.	.Clean up around an operating belt conveyor following company procedures which shall include: • wearing required personal protective equipment; • wearing proper clothing (not loose or torn); • working from a safe location only; • facing proper direction; • keeping tools and self a safe distance away from the conveyor; • ensuring lock and tag procedures are performed when cleaning in critical areas; (as applicable); • loading conveyor on incline ensuring proper footing and correct disposition of materials to prevent hazardous spillage; • breaking up jams or blockages only when conveyor stopped and locked out and tagged; • ensuring guards remain in place; • staying off the conveyor; • crossing over/under at designated areas only; • communicating with fellow workers as required; • reporting any hazards and/or defects to

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Select and maintain proper tools and work within the limitations of tool(s) and self. Determine hazards or potential hazards of working around a moving conveyor and components such as: • belts; • pulleys and idlers; • shuttle (if applicable); • loading on an incline; • unsuspected movement resulting from stored (potential) energy caused by a jam/blockage in the system;. • pinch points; • belt dressing. Determine procedures for: • observing start-up alarm including remote/automatic start-up; • emergency shut-down; • reporting; • cleaning around conveyor; • lock-out and tag. Determine situations requiring emergency shutdown such as: • discharge points plugged; • foreign material on belt and/or magnet; • improper tracking of belt; • damage to equipment; • hazards and injuries.	appropriate personnel; • activating pull cord to shut down conveyor in an emergency situation and reporting the incident to appropriate personnel.

U1591.10 WORK SAFELY AROUND HOT DUST

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine and identify hazardous or potentially hazardous conditions associated with hot dust and runs of hot dust. Determine personal protective equipment required to work around hot dust such as:	Work around hot dust following company procedures and government regulations which shall include: • wearing required personal protective equipment such as respiratory (ref. O.H.S.A.);

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
• woolen pants and shirt; • high heat mitts; • long leg and long sleeve underwear; • heat reflecting hood and jacket; • face shield, glasses, goggles; • approved footwear; • spats; • wrist protectors; • neck protectors (Nomex); • skull cap; • respiratory protection. Determine and identify hazardous and/or potentially hazardous conditions associated with plugged drag discharges, cyclones, horizontal flue and roaster discharges and inspection doors.	• ensuring safety of self and others.

U1591.11 WORK SAFELY AROUND MOLTEN METAL

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine personal protective equipment to be used such as: • fibreglass hardhat; • woolen pants and shirts; • bailman's jacket; • mitts (high heat); • long leg and long sleeve underwear; • leather apron; • heat reflecting chaps; • heat reflecting hoods and jackets; • leather spats; • heat reflecting shield (clear or tinted) and situations requiring the use of same. Determine and identify hazardous or potentially hazardous conditions associated with molten metal with respect to:	Work around molten metal following company procedures and government regulations which shall include: • wearing required personal protective equipment (ref. O.H.S.A.); • using designated travel ways only; • working from a safe location and/or position only; • take precautions to prevent contact between molten metal and damp surfaces (ref. O.H.S.A.); • taking appropriate action such as: - reporting hazardous and/or potentially hazardous conditions to appropriate personnel - removing hazardous and/or potentially hazardous conditions - guarding hazardous and/or potentially hazardous conditions

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
• hot sparks; • molten slag and/or matte; • molten metal and moisture; • molten metal run-out; • molten metal fumes; • heat radiation; • heat exhaustion.	- evacuating following company procedures.

U1591.12 FOLLOW COMPANY EVACUATION PROCEDURES

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine types of emergencies such as: • fire; • break-out; • spill(s); • gas leak(s); • explosions/implosion. And procedures to be followed such as: - evacuation - assembling in designated area - communicating emergency to appropriate personnel.	Demonstrate the skills required to follow company emergency evacuation procedures in a real or simulated emergency which shall include: • evacuation of building; • assembling in designated area; • communicating emergency to appropriate personnel.

PERFORMANCE DEMONSTRATION GUIDELINE

Trainee's / Worker's Name

Emp. #

U1591.0 WORK SAFELY IN A SMELTER ENVIRONMENT

TASKS	DATE COMPLETED	INSTRUCTOR'S SIGNATURE	TRAINEE'S/ WORKER'S SIGNATURE
U1591.01 Deal with Hazardous/Potentially Hazardous Conditions	-		
U1591.02 Wear a Fall Arrest System.	-		
U1591.03 Manually Lift and Carry Materials and Supplies	-		
U1591.04 Confined Space Entry	-		
U1591.05 Work Safely Around Operating Equipment	-		
U1591.06 Work Safely Around Hazardous Material	-		
U1591.07 Work Safely Around Energy Sources	-		
U1591.08 Work Safely Around Mobile Equipment	-		
U1591.09 Clean Up Around Conveyors	-		
U1591.10 Work Safely Around Hot Dust	-		
U1591.11 Work Safely Around Molten Metal	-		
U1591.12 Follow Company Evacuation Procedures	-		

U1592.0 HOUSEKEEPING

GENERAL PERFORMANCE OBJECTIVE

Maintain a clean and safe workplace. All work must be done in compliance with applicable acts, regulations, standards and company standards.

U1592.01 INSPECT THE WORKPLACE

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine hazardous and/or potentially hazardous conditions in the workplace such as: • open holes / fall hazards; • confined spaces; • low clearances; • ladders and scaffolds; • suspended loads; • spills and leaks; • high energy sources; • structural deterioration. Determine the procedures and safety precautions to be observed with respect to: • permits (as required); • cleaning up spills and leaks; • reporting; • guarding; • disposing.	Inspect the workplace for hazardous and/or potentially hazardous conditions and take corrective action following company procedures which shall include: • wearing required personal protective equipment; • guarding all identified hazards using required ropes/barriers and/or signs; • cleaning up spills and/or leaks as required; • removing the hazard; • reporting the condition to appropriate personnel.

U1592.02 PRACTICE GOOD HOUSEKEEPING

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Select tools and equipment such as: • mechanical sweeper; • shovels; • brooms; • pails; • wheelbarrow; • sweeping compound; • cleaning agents. Determine procedures for and safety precautions to observe in maintaining a safe and clean work place with respect to: • protective equipment; • reporting; • cleaning and maintaining tools and equipment (as applicable); • removal/disposal of waste materials; • sweeping; • vacuuming; • coiling hoses; • safety chains in place; • guard rail condition; • safety gates operational; • condition of gratings; • tools/equipment limitations; • use of wheel barrow (as applicable); • removal, disposal and storage of extraneous materials such as: - scrap steel / lumber - process materials - platforms - tools - slag spills - refractories.	Practice good housekeeping by maintaining a safe and clean workplace by following company procedures which shall include: • wearing required personal protective equipment; • reporting defects of tools and equipment; • cleaning and maintaining (as applicable) tools and equipment; • returning tools to storage; • removing garbage for disposal; • vacuuming (as required); • disposing of waste materials in proper container.

U1592.03 WASH DOWN FLOORS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Select hose, nozzle, and solutions (as applicable) for cleaning and determine the area to be washed down. Select safety equipment and clothing such as: • rubber boots; • rubber gloves; • mono goggles; • rain suit (acid resistant as applicable); • face shield (as applicable). Determine procedures for, and safety precautions to be observed with respect to: • connecting hoses; • starting sump pump (as applicable); • obtaining flow and pressure; • drainage; • shutting down pump (including emergency shutdown); • recycled water (as applicable); • using hose only for the purpose it was intended; • spray patterns; • removing spills and dust; • removing and replacing ditch covers and/or grating; • electrical equipment; • molten metal; • molten metal vessels.	Hose floors to remove spills and dust following company procedures which shall include: • guarding area as applicable; • ensuring intake screen(s) clean; • connecting hose(s) (tight and leak proof); • opening valve slowly to establish required flow/pressures; • adjusting nozzle to required water stream; • directing flow to ensure proper drainage to sump; • hosing only designated area(avoiding hosing/watering of electrical equipment/molten metal/molten metal vessels; • shutting off and coiling hoses; • using proper lifting technique when removing/replacing floor grating; • shoveling up chunks and debris for proper disposal.

U1592.04 SET UP VACUUM

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify the name, location and function of the components of the vacuum system such as: • blower; • vacuum gauge; • bag(s); • hoses; • nozzles and wands; • permanent outlets; • system controls; • discharge equipment; • filters; • cyclone. Determine the hazards associated with high powered vacuum systems.	Set up vacuum system in the workplace by ensuring that: • pre-operational check is performed; • defects are repaired or reported; • signs and barricades are erected/positioned (as applicable); • hoses are tight and free of leaks; • hoses are free of defects; • walkways and travel ways are free of obstructions. Select appropriate vacuum system for wet or dry application.

NOTE: *This module is intended for low pressure in-plant central or shop-vac systems with low potential for injury.*

U1592.05 USE VACUUM

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for operating a vacuum system including: • conducting operational checks and reporting any defects; • wearing protective equipment; • starting/shutting down system; • identifying acceptable materials to be vacuumed; • taking precautions and maintaining system. Determine the potential hazards associated with vacuuming incompatible materials into the same receiving vessel.	Use a vacuum system in the workplace to remove acceptable materials only following company procedures which shall include: • wearing required personal protective equipment; • ensuring that the bin has sufficient capacity; • ensuring material is not hung up above access point; • activating system; • body and clothing are kept away from intake; • grounding/bonding or use of anti-static hose is performed ensuring that: - suction (pressure) is at required level - system free of leaks/defects - discharge points in operating condition.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
	• working within the limitations of the equipment; • cleaning blockages as required; • emptying system; • shutting down systems; • storing hoses in required location.

PERFORMANCE DEMONSTRATION GUIDELINE

Trainee's / Worker's Name:__

Emp. #___

U1592.0 HOUSEKEEPING

TASKS	DATE COMPLETED	INSTRUCTOR'S SIGNATURE	TRAINEE'S/ WORKER'S SIGNATURE
U1592.01 Inspect the Workplace	-		
U1592.02 Practice Good Housekeeping	-		
U1592.03 Wash Down Floors	-		
U1592.04 Set Up Vacuum	-		
U1592.05 Use Vacuum	-		

U1593.0 HAND AND POWER TOOLS

GENERAL PERFORMANCE OBJECTIVE

Demonstrate the proper use of hand tools, electrical hand tools, and pneumatic hand tools in a smelter process environment. All work must be done in compliance with applicable acts, regulations, standards and company standards.

U1593.01 SELECT, USE, MAINTAIN AND STORE HAND TOOLS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify the hand tools and describe their uses such as: • picks; • scrapers; • hammers; • pry bars; • pipe wrenches; • adjustable wrenches; • socket wrenches; • screw drivers; • knives (utility); • shovels. Determine precautions to be taken while using tools and protective equipment to be worn. Determine the type of tool for a given situation considering: • size and shape of tool; • limitations / strength of self and tools; • type of job to be done; • condition of tool(s) (e.g. properly dressed). Determine the type of injury that could result from the improper use of hand tools.	Demonstrate the proper use of hand tools including: • wearing required personal protective equipment; • working within one's own physical limitations; • working from a safe and secure position; • working within limitations of tools; • ensuring adequate ventilation and lighting; • inspecting for damage to tools, and equipment; • reporting defects to appropriate personnel; • ensuring use of proper tools for the job. Maintain and store hand tools following company procedures which shall include: • inspecting tools for defects and/or damage; • leaning prior to use / storage; • storing tools in proper place; • reporting defects / damage.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for maintaining and storing hand tools.	

U1593.02 INSPECT AND SET UP ELECTRICALLY POWERED HAND TOOLS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify the name, function, uses and limitations of electrically powered hand tools and attachments such as: • chippers; • drills; • saws; • sanders; • grinders; • extension lights. Determine precautions to be taken while using tool(s) and protective equipment to be worn. Determine inspections to be made and locate items to be inspected. Determine electrical hazards such as: • frayed or bare wires; • wet locations; • accidental shorting or grounding. Recognize electrical safety equipment such as: • ground fault interrupter (GFI); • grounded circuit; • double insulated tool; • low voltage lighting.	Inspect and hook up electrically powered hand tools following company procedures which shall include: • wearing required personal protective equipment; • inspecting tools prior to use to ensure: - electrical cord free of damage, no frays or bare wires - extension cord free of damage, no bare wires - connecting plug free of damage and properly grounded (as required) - no damage to tool, attachments or guards. • ensuring switch in off position; • locating and securing extension cord(s) in a safe location; • ensuring safe operation of tool; • inspecting function of lock-on trigger [ie: grinder]; • ensuring function of trigger safety lock [ie. circular saw]. Use appropriate approved electrical safety equipment to prevent electrical shock.

U1593.03 USE ELECTRICALLY POWERED HAND TOOLS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine specifications/requirements of job and safety precautions to be observed. Select tools, materials, and safety equipment. Determine procedures for starting up, operating and shutting off tool(s). Determine procedures for replacing attachments.	Demonstrate the proper use of electrically powered hand tools following company procedures which shall include: • wearing required personal protective equipment; • ensuring safety of self, others, equipment and the environment; • working within one's own physical limitations; • working within the limitations of tools(s) and attachments; • ensuring adequate lighting and ventilation; • working from a safe and secure location; • positioning tools in correct position; • ensuring that the object and/or equipment to be worked on is secure; • starting up tools; • replacing attachments, to ensure safe and efficient operation of the tool only while the electrical cord is disconnected; • working to specifications as required; • shutting off tool; • disconnecting tool and extension cords; • retrieving, maintaining, and coiling extension cord.

U1593.04 MAINTAIN AND STORE ELECTRICALLY POWERED HAND TOOLS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for inspecting, maintaining, reporting damages, storing electrically powered hand tools and attachments and safety precautions to be observed. Identify damages and defects to tools and attachments. Locate proper storage place for tools/ attachments.	Maintain and store electrically powered hand tools and attachments following company procedures which shall include: • inspecting tools and accessories for defects and/or damage before, during, and after use; • reporting defects and/or damage to appropriate personnel; • cleaning tools, cords and accessories prior to storing; • storing tools and attachments in proper place.

U1593.05 INSPECT AND SET UP PNEUMATICALLY POWERED HAND TOOLS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify name, function, uses, and limitations of pneumatically powered hand tools and their accessories such as: • hammer; • grinder; • chipper; • impact wrenches; • plugger; • jackleg. Determine precautions to be taken while inspecting and connecting tool(s) and protective equipment to be worn. Determine inspections to be made and locate items to be inspected.	Inspect and set up pneumatically powered hand tools following company procedures which shall include: • inspecting tools prior to use to ensure: - hoses free of damage - blowing out air hose(s) to clear lines - lubrication oil at proper level - casing, safety devices, and attachments free of damage. • connecting lubricator as required; • connecting hoses to air lines ensuring tight and secure fit; • properly locating and securing hoses and lubricators to avoid damage and/or injury; • connecting pneumatic tools; • attaching and securing air line; - ensuring tool in "off" or "neutral" position as required - ensuring required air pressure - ensuring lines free of leaks and/or defects.

U1593.06 USE PNEUMATICALLY POWERED HAND TOOLS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine specifications/requirements of the job and precautions to be observed. Select tools, materials and safety equipment. Determine procedures for starting up, operating and shutting off tool(s). Determine procedures for replacing attachments.	Demonstrate the proper use of pneumatically powered hand tools following company procedures which shall include: • wearing required personal protective equipment; • ensuring safety of self, others, equipment and the environment; • working within one's own physical limitations; • working within the limitations of the tool(s) and attachments; • ensuring adequate lighting and ventilation; • working from a safe and secure location only; • positioning tool(s) as required; • ensuring that the object and/or equipment to be worked on is secure; • starting up tools; • replacing attachments to ensure safe and efficient operation of the tool(s); • working to specifications as required; • shutting off tools; • shutting off air supply; • relieving/bleeding pressure in air hoses; • disconnecting air hose(s); • disconnecting lubricator as required; • retrieving, maintaining, and coiling hoses.

U1593.07 MAINTAIN AND STORE PNEUMATICALLY POWERED HAND TOOLS, HOSES AND ATTACHMENTS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for inspecting, maintaining, reporting defects, and storing pneumatic tool(s), hoses and attachments. Identify damages and defects to tools, hoses and attachments. Locate proper storage location for tool(s), hoses and attachments.	Maintain and store pneumatically powered hand tools, hoses and attachments following company procedures which shall include: • inspecting tools, hoses and attachments for defects and/or damage before, during, and after use; • reporting defects and/or damage to appropriate personnel; • cleaning tools, hoses and attachments prior to storage; • storing tools and attachments in proper location; • lubricating as required.

PERFORMANCE DEMONSTRATION GUIDELINE

Trainee's / Worker's Name:__

Emp. #__

U1593.0 HAND AND POWER TOOLS

TASKS	DATE COMPLETED	INSTRUCTOR'S SIGNATURE	TRAINEE'S/ WORKER'S SIGNATURE
U1593.01 Select ,Use, Maintain and Store Hand Tools	-		
U1593.02 Inspect and Set Up Electrically Powered Hand Tools	-		
U1593.03 Use Electrically Powered Hand Tools	-		
U1593.04 Maintain and Store Electrically Powered Hand Tools	-		
U1593.05 Inspect and Set Up Pneumatically Powered Hand Tools	-		
U1593. 06 Use Pneumatically Powered Hand Tools	-		
U1593.07 Maintain and Store Pneumatically Powered Hand Tools, Hoses and Attachments	-		

U1594.0 LIFTING DEVICES

GENERAL PERFORMANCE OBJECTIVE

Set up, secure, rig and lift loads; and dismantle, move, and store lifting devices. All work must be done in compliance with applicable acts, regulations, standards, and company standards

U1594.01 SET UP LIFTING DEVICES

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine location and type of job to be done ensuring that the lifting device and attachments are adequate. Identify approved lifting devices such as: • chain blocks; • come-a-longs; • tugger hoists; • electrical, hydraulic and pneumatic lifting devices; • overhead crane(s); • electric and/or hand winch. Identify approved attaching devices such as: • hooks; • safety latches; • safety chains; • anchors; • chains/ropes; • sheaves; • bails; • auto bailer; • tail chain; • chains/cables (e.g. crutch, gang); • tongs; • pallet lifter. Determine the weight of the load (as required).	Set up and position lifting device following company procedures which shall include: • wearing required personal protective equipment; • setting up lifting device (as applicable); • ensuring lifting device secure and properly anchored; • ensuring area guarded as required; • ensuring all safety devices in place and operative; • reporting defects to appropriate personnel; • ensuring energy source (as applicable); • communicating with others (as applicable); • ensuring proper ventilation and lighting; • wearing fall arrest system as required (ref. O.H.S.A.).

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for conducting pre-operational checks and safety precautions to be observed including proper anchoring and pre-examination of load. Identify and locate items to be checked. Determine ventilation and lighting requirements. Determine situations requiring the wearing of fall arrest system (ref. O.H.S.A.) and procedures for wearing same.	

U1594.02 RIG AND SECURE LOAD

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify rigging equipment such as: • magnets; • slings and sling arrangements; • eye bolts; • snatch blocks; • tag lines; • shims, fillers, spacers; • beam clamps. Determine company procedures for rigging and securing load (ref. O.H.S.A.) and safety precautions to be observed.	Rig and secure the load following company procedures which shall include: • attaching tag lines as applicable; • using fasteners as necessary; • centering and balancing the load; • attaching approved slings ensuring free of defects; • attaching approved hook ensuring safety latch operable; • avoiding pinch points; • placing shims, fillers, and spacers as required; • visually checking the lifting device and load for hazardous or potentially hazardous conditions and reporting any defects.

U1594.03 MAKE THE LIFT

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for lifting the load and safety precautions to be observed with respect to: • safety of self, others and property; • hand signals; • radio communications (as applicable); • test lift; • alarms and guarding; • lifting within the limitations of the lifting devices and attachments; • placing loads; • wearing fall arrest system (as applicable); • operating around high voltage and other energy sources (ref. O.H.S.A.); • ensuring load chart/capacity plate is in place; • determining/estimated load weight.	Make the lift following company procedures which shall include: • wearing required personal protective equipment; • ensuring adequate clearance; • ensuring safety of self, others and property in area of lift; • placing barricades/guards (as applicable); • activating power supply (as applicable); • making test lift; • standing clear of suspended loads; • using hand signals; • using radio communications (as applicable); • ensuring load chart/capacity plate is in place; • activating alarms (as applicable); • lifting load and ensuring steady lift within limitations of equipment; • placing and securing load in designated location without damage to load and equipment or injury to personnel; • wearing fall arrest system as applicable.

U1594.04 DISMANTLE, MOVE, AND STORE LIFTING EQUIPMENT

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for and safety precautions to be observed with respect to: • removing hooks, slings, and attachments; • transporting; • inspecting; • storing; • deactivating lifting device(s); • reporting defects.	Dismantle, move, and store lifting equipment following company procedures which shall include: • removing hooks; • inspecting for defects; • returning slings and accessories to storage; • restoring workplace to normal condition (replacing grates, floor boards, etc.); • removing guards and/or barricades; • reporting any defects in equipment and attachments to appropriate personnel; • securing and deactivating lifting device as required and returning lifting devices to storage.

PERFORMANCE DEMONSTRATION GUIDELINE

Trainee's / Worker's Name:__

Emp. #__

U1594.0 LIFTING DEVICES

TASKS	DATE COMPLETED	INSTRUCTOR'S SIGNATURE	TRAINEE'S/ WORKER'S SIGNATURE
U1594.01 Set Up Lifting Devices	-		
U1594.02 Rig and Secure Load	-		
U1594.03 Make the Lift	-		
U1594.04 Dismantle, Move, and Store Lifting Equipment	-		

U1595.0 WORK WITH LADDERS AND SCAFFOLDS AND/OR PLATFORMS

GENERAL PERFORMANCE OBJECTIVE

Erect/assemble, work on, maintain, and store ladder(s) and scaffolds and/or work platform in a smelter environment. All work must be done in compliance with applicable acts, regulations, standards, and company standards.

U1595.01 ERECT LADDER(S)

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify ladders such as step and extension, their construction (wood/metal/fibreglass), and describe their uses considering: • type of job to be done; • strength; • range; • limitations. Determine the situation requiring the use of ladders. Select proper ladder for a specific job (ref. O.H.S.A.). Determine the procedures for and precautions to be observed with respect to: • inspecting ladder(s) (e.g. safety cleats); • safety; • erection; • physical limitations; • repositioning ladder.	Erect ladder(s) following company procedures which shall include: • wearing required personal protective equipment; • ensuring workplace free of obstructions and hazards; • securing and guarding area; • inspecting ladder and reporting any defects; • positioning ladder in desired location ensuring: - travel way secured - footing secured - proper angle - top of ladder at required height and resting on secure and stable support - no overhead obstructions or hazards such as pipes, beams, and high energy sources - tying off ladder (as applicable).

U1595.02 WORK WITH LADDER(S)

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for and safety precautions to be observed with respect to: • 3 point contact; • mounting/dismounting; • heat sources; • electrical power sources; • piping and venting; • physical obstructions; • mobile equipment (stationary/operating); • operating equipment; • wearing fall arrest system (ref. O.H.S.A.).	Work with ladder(s) following company procedures which shall include: • ascending and descending ladder carefully by using 3 point contact and by facing the ladder; • wearing fall arrest system as required; • working within one's physical limitations; • repositioning ladder as required; • mounting/dismounting ladder at required level ensuring that the ladder is projecting one meter above the mount/dismount location using 3 point contact.

U1595.03 MAINTAIN AND STORE LADDER(S)

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for inspecting, maintaining, and storing ladder(s) and safety precautions to be observed. Identify damage and/or defects to ladder(s). • rungs; • feet; • legs; • spreader and rung locks; • rope/pulley; • approval stickers.	Maintain and store ladder(s) following company procedures which shall include: • inspecting for defects and/or damage before, during, and after use; • cleaning grease/dirt from ladder(s); • reporting defects to appropriate personnel; • storing ladder(s) in proper place.

U1595.04 ASSEMBLE/ERECT SCAFFOLD

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify scaffold and approved work platforms with respect to their construction (metal, wood, fiberglass) and describe their uses considering: • strength; • range; • limitations. Determine situations requiring the use of scaffold. Select scaffold for specific situation considering the type of job to be done and height requirements (ref. O.H.S.A.). Determine procedures for: • assembling/erecting scaffold; • safety precautions to be observed with respect to: - heat sources - electrical power sources - piping and venting - physical obstructions (overhead hazards i.e. loose refractory) - mobile equipment (operating stationary). • operating equipment; • leveling; • securing; • guarding area.	Assemble/erect scaffold in required location following regulations which shall include: • wearing required personal protective equipment; • ensuring workplace free of obstructions and hazards; • inspecting scaffold for defects and report same to appropriate authority; • wearing fall arrest system as required; • guarding and securing area; • erecting/assembling scaffold to two working levels; • ensuring correct placing and securing of planks (as applicable); • anchoring and securing scaffold; • leveling scaffold; • installing and securing railing/toe boards as required; • ensuring adequate clearance and headroom.

U1595.05 WORK ON SCAFFOLD AND/OR WORK PLATFORMS

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for and safety precautions to be observed with respect to: • mounting and dismounting scaffold and/or work platform; • 3 point contact; • wearing fall arrest system (ref. O.H.S.A.); • physical limitations; • repositioning scaffold.	Work safety on a scaffold and/or work platform following regulations and company procedures which shall include: • wearing required personal protective equipment; • working within one's own physical limitations; • protecting self, others, and equipment; • mounting/dismounting scaffold and/or work platform using 3 point contact; • ensuring adequate clearance and headroom; • ensuring adequate lighting and ventilation; • ensuring scaffold and/or work platform free of debris and grease; • wearing fall arrest system as required (ref. O.H.S.A.); • repositioning scaffold (as required).

U1595.06 DISMANTLE, MAINTAIN, AND STORE SCAFFOLD AND/OR WORK PLATFORM

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for and safety precautions to be observed with respect to: • inspecting equipment; • dismantling equipment; • maintaining equipment; • storing equipment; • protections of self, others, and equipment.	Dismantle, maintain, and store scaffold following company procedures which shall include: • inspecting scaffold for defects and reporting same to appropriate authority; • dismantling scaffold in orderly fashion; • ensuring protection of self, others, and equipment; • maintaining scaffold and/or work platform by: - removing grease and/or dirt, - removing extraneous materials, - reporting any defects and/or damage to appropriate personnel. • storing scaffold in designated location.

PERFORMANCE DEMONSTRATION GUIDELINE

Trainee's / Worker's Name:

Emp. #___

U1595.0 WORK WITH LADDER(S) AND SCAFFOLDS AND/OR PLATFORMS

TASKS	DATE COMPLETED	INSTRUCTOR'S SIGNATURE	TRAINEE'S/ WORKER'S SIGNATURE
U1595.01 Erect Ladder(s)	-		
U1595.02 Work with Ladder(s)	-		
U1595.03 Maintain and Store Ladder(s)	-		
U1595.04 Assemble/Erect Scaffold	-		
U1595.05 Work on Scaffold and/or Work Platforms	-		
U1595.06 Dismantle, Maintain, and Store Scaffold and/or Work Platform	-		

U1596.0 DEAL WITH DESIGNATED AND OTHER HAZARDOUS SUBSTANCES

GENERAL PERFORMANCE OBJECTIVE

Deal with designated and hazardous substances safely and efficiently. All tasks must be done in compliance with applicable acts, regulations, standards and company standards.

U1596.01 DEAL WITH DESIGNATED AND OTHER HAZARDOUS SUBSTANCES

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify designated substances by considering/recognizing the following: • label; • where stored; • type and shape of container; • placards. Identify warning symbols such as: • flammable; • explosive • poison; • corrosive. Determine the hazards of handling substances with respect to: • burns; - thermal - chemical • contamination; - absorption - inhalation - ingestion • explosion; • non-compatible mixtures. Determine which designated substances are present in given situations and their location (eg. silica, lead, arsenic etc.). Determine safety precautions to be observed when working around designated substance (ref. O.H.S.A.,WHMIS and Designated Substances Regulations).	Deal with hazardous or potentially hazardous conditions relating to designated substance following company procedures which shall include: • wearing required personal protective equipment; • identifying hazardous or potentially hazardous conditions; • ensuring adequate ventilation; • assessing the severity of the condition and taking corrective action by: - reporting condition(s) to appropriate personnel - guarding all identified hazardous conditions - evacuating the area - cleaning up spills and leaks. • ensuring follow-up action to ensure the safety of self, others, equipment and the environment.

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for taking appropriate action to remove hazardous conditions with respect to: • cleaning up spills/leaks; • reporting; • guarding; • follow-up action; • non-compatible mixtures; • evacuation; • ventilation. Identify the need for assessment where designated substance are present. Explain the control program(s) with respect to: • engineering control; • work practices; • hygiene practices and facilities; • health effects; • monitoring; • medical surveillance; • personal protective equipment.	

U1596.02 HANDLE DESIGNATED AND OTHER HAZARDOUS SUBSTANCES

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for handling hazardous substances and safety precautions to be observed with respect to: • lifting; • loading; • transporting; • unloading; • reporting; • personal hygiene; • non-compatibles. Determine applicable materials safety data sheets (WHMIS/O.H.S.A.).	Handle materials containing hazardous substances following company procedures which shall include: • wearing required personal protective equipment; • lifting within one's personal limitation; • loading material containing hazardous substances and securing into suitable containers for transportation (if applicable); • ensuring safe transportation of hazardous substance to required destination; • ensuring safe disposal of material containing designated substances in required storage or mixing area (as applicable); • reporting abnormal conditions to appropriate personnel; • practicing personal hygiene; • ensuring the protection of self, others, equipment and the environment.

U1596.03 PRACTICE EMERGENCY PROCEDURES

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine situations requiring the use of eye wash fountains and emergency safety showers and procedures for using same. Locate emergency stations such as: • eye wash stations; • first aid; • emergency showers; • antidote; • immersion bath.	Demonstrate the skills to follow company emergency procedures which shall include: • wearing required personal protective equipment; • reporting emergency incidents; • ensuring eye wash stations/fountains and safety showers functional; • using eye wash stations; • using emergency showers; • seeking medical assistance as soon as possible.

PERFORMANCE DEMONSTRATION GUIDELINE

Trainee's / Worker's Name:

Emp. #___

U1596.0 DEAL WITH DESIGNATED AND OTHER HAZARDOUS SUBSTANCES

TASKS	DATE COMPLETED	INSTRUCTOR'S SIGNATURE	TRAINEE'S/ WORKER'S SIGNATURE
U1596.01 Deal with Designated and Other Hazardous Substances	-		
U1596.02 Handle Designated and Other Hazardous Substances	-		
U1596.03 Practice Emergency Procedures	-		

U1597.0 OPERATE ELEVATORS

GENERAL PERFORMANCE OBJECTIVE

Operate elevators to move material, supplies, equipment and personnel. All work must be done in compliance with applicable acts, regulations, standards and company standards.

U1597.01 INSPECT ELEVATOR

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Identify name, function, use and limitations of components of an elevator such as: • telephone; • anti-crushing edge; • stop/start button; • emergency stop button; • emergency alarm(s); • inspection door; • ventilation fan; • doors; • lighting; • manual/automatic selector switch(s) and describe their function. Determine procedures for conducting a pre-operational inspection and identify items to be checked and precautions to be observed.	Visually inspect the elevators (freight and passenger) following company procedures which will include: • checking for damages to: - doors, - floors, - controls, • listening for unusual noises; • ensuring doors open and close properly; • telephone operating; • ensuring adequate lighting and ventilation; • assessing the severity of any damage/malfunction and taking appropriate action which shall include: - reporting condition to appropriate personnel - removing hazardous condition(s) - guarding the area. • verifying position of manual/automatic selector switch(s) (as applicable).

U1597.02 LOAD FREIGHT ELEVATOR

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for loading materials, supplies and equipment with respect to: • balancing and securing load; • authorized personnel on elevator; • precautions to be observed; • manual/automatic selector switch(es) (as applicable).	Load materials, supplies and equipment following company procedures which shall include: • separating materials; • balancing load; • securing load; • loading within equipment limitation (weight and dimensions); • switching automatic selector switch to "off" (as required); • returning automatic selector switch to normal when job is complete (as required).

U1597.03 LOAD ELEVATOR PERSONNEL

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for loading personnel onto elevator and precautions to be observed.	Load personnel into elevator following company procedures which shall include: • keeping elevator access clear of materials and equipment; • allowing loading within the posted limitation of the elevator; • automatic function(s) operational (as applicable).

U1597.04 OPERATE ELEVATOR

ENABLING OBJECTIVES	PERFORMANCE OBJECTIVES
Determine procedures for operating elevator with respect to: • operational checks; • starting/stopping; • emergency stop(s); • automatic function(s) operational; • manual function(s) operational.	Operate elevator to transport materials, supplies, equipment and/or personnel by following company procedures which shall include: • listening for unusual noise(s); • sensing unusual vibrations; • ensuring proper elevator operation; • stopping elevator at required locations(s); • avoiding pinch points (e.g. doors); • reporting any defects to appropriate personnel; • operating controls in proper sequence; • leaving doors closed when vacating elevator; • returning automatic function(s) to normal before vacating elevator (as required).

NOTE: *Follow company procedures for elevator use in case of an accident, fire, emergency evacuation, and elevator servicing.*

PERFORMANCE DEMONSTRATION GUIDELINE

Trainee's / Worker's Name:

Emp. #___

U1597.0 OPERATE ELEVATORS

TASKS	DATE COMPLETED	INSTRUCTOR'S SIGNATURE	TRAINEE'S/ WORKER'S SIGNATURE
U1597.01 Inspect Elevator	-		
U1597.02 Load Freight Elevator	-		
U1597.03 Load Elevator Personnel	-		
U1597.04 Operate Elevator	-		